Paragraphs 2-5 of the Official Action reject claims 1-17, 19-30 and 47-58 as obvious based on the combination of JP 07-038113 to Morosawa and U.S. Patent No. 5,648,276 to Hara et al., either alone or in combination with one or more of JP 09-186336 to Kudo et al. and U.S. Patent No. 5,608,232 to Yamazaki et al. The Applicants respectfully traverse the rejection because the Official Action has not made a *prima facie* case of obviousness.

As stated in MPEP §§ 2142-2143.01, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

The prior art, either alone or in combination, does not teach or suggest all the features of the independent claims. Independent claims 1-12, 19, 20, 47 and 48 recite leveling a surface of a semiconductor film by recrystallizing a semiconductor film after removing irradiation of a laser light and removal of an oxide film. For the reasons provided below, Morosawa, Hara, Kudo and Yamazaki '232, either alone or in

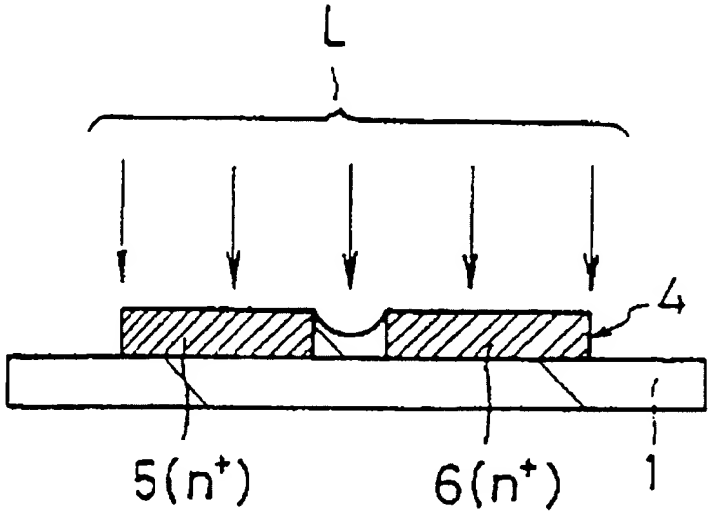
combination, do not teach or suggest the above-referenced features of the present invention.

The Official Action concedes that "Morosawa does not specifically disclose recrystallizing the semiconductor film in order to level the semiconductor film after native oxide removal process" (pages 3, 5, 9, 10, 17, 19, 20, 22, 25, 28, 31, 33, 35, 37, 40 and 43, Paper No. 20051102).

The Official Action asserts that Hara discloses a "process for fabricating of the thin film semiconductor device ... depositing of the semiconductor layer ... crystallizing of the semiconductor layer ... cleaning the semiconductor layer and recrystallizing the semiconductor layer ... in order to level the surface of the semiconductor layer having good uniformity and high reliability" (pages 3, 5, 9, 10, 17, 19, 21, 22-23, 25-26, 28-29, 31-32, 33, 35, 37, 40 and 43, Id.). The Applicants respectfully disagree and traverse the above assertions in the Official Action. Specifically, Hara does cure the deficiencies in Morosawa.

Hara appears to teach that "a laser beam L ... is irradiated to the a-Si:H,P thin film 2 and the a-Si:H thin film 3, as shown in FIG. 5E, to change them into a polycrystalline Si thin film 4 by melting-recrystallization" (column 8, lines 5-11; Figure 5E reproduced below).

Fig. 5E



In other words, Hara teaches that melting-recrystallization is caused by irradiation of a laser beam for crystallizing an a-Si:H,P thin film 2 and an a-Si:H thin film 3. Therefore, although Hara appears to teach recrystallization by laser irradiation, this is the extent of its teaching. Hara does not teach or suggest leveling a surface of a semiconductor film by recrystallizing a semiconductor film after irradiation of a laser light and removal of an oxide film.

Also, Hara appears to teach "a method and an apparatus for fabricating a thin film semiconductor device, capable of providing a clean and high-quality semiconductor/insulator interface" without exposing the polycrystalline Si thin film to the outside air in order to solve a problem of forming a native oxide film on a surface of the polycrystalline Si thin film (column 1, line 50 to column 2, line 5; and column 8, lines 19-22). That is, Hara seeks to avoid production of a native oxide film on a surface of a polycrystalline Si thin film. Therefore, the Applicants respectfully submit that Hara cannot teach or suggest leveling a surface of a semiconductor film by recrystallizing a semiconductor film after irradiation of a laser light and removal of an oxide film.

Kudo and Yamazaki '232 do not cure the above-referenced deficiencies in Morosawa and Hara. Kudo is relied upon to allegedly teach laser irradiation in air, and Yamazaki '232 is relied upon to allegedly teach furnace annealing. However, Morosawa, Hara, Kudo and Yamazaki '232, either alone or in combination, do not teach or suggest leveling a surface of a semiconductor film by recrystallizing a semiconductor film after removing irradiation of a laser light and removal of an oxide film.

Since Morosawa, Hara, Kudo and Yamazaki '232 do not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

Eric J. Robinson
Reg. No. 38,285

Robinson Intellectual Property Law Office, P.C.
PMB 955
21010 Southbank Street
Potomac Falls, Virginia 20165
(571) 434-6789